

Amendments to the Claims

Please cancel all pending claims (Claims 89-121) and add new claims 122-163 as indicated below. The listing of claims below replaces all prior versions.

- 1-121. (Cancelled).
122. (New) Purified cage molecules consisting of carbon atoms.
123. (New) Purified cage molecules consisting of carbon atoms in solid form.
124. (New) Crystalline cage molecules consisting of carbon atoms.
125. (New) Purified cage molecules consisting of carbon atoms in crystalline form.
126. (New) A macroscopic amount of purified cage molecules consisting of carbon atoms.
127. (New) A product comprising a cage moiety consisting of carbon atoms.
128. (New) A product comprising cage molecules consisting of carbon atoms soluble in non-polar organic solvents.
129. (New) A free-flowing particulate comprising cage molecules consisting of carbon atoms soluble in non-polar organic solvents.
130. (New) A free-flowing particulate comprising cage molecules consisting of carbon atoms in microcrystalline form.
131. (New) A solid comprising a macroscopic amount of cage molecules consisting of carbon atoms in crystalline form.
132. (New) A solid comprising a macroscopic amount of cage molecules consisting of carbon atoms soluble in non-polar organic solvents.
133. (New) A solid carbon product prepared by the process comprising: (a) vaporizing

a carbon source in the presence of an inert quenching gas under conditions effective to provide a sooty carbon product comprising cage molecules; (b) depositing the sooty carbon product on a collecting substrate; (c) removing the sooty carbon product from the collecting substrate; (d) contacting the sooty carbon product with a non-polar organic solvent effective to dissolve cage molecules, said solvent being present in an amount effective to dissolve the cage molecules in said sooty carbon product; and (e) recovering from said resulting product formed when the sooty carbon product was contacted with said solvent a solid carbon product comprising cage in a macroscopic amount.

134. (New) The solid carbon product of claim 133 in which the carbon in step (a) is vaporized in an evacuated reactor.

135. (New) The solid carbon product of claim 134 in which the carbon source of step (a) is vaporized in an evacuated bell jar.

136. (New) The solid carbon product of claim 133 in which the carbon source subject to vaporization in step (a) is graphite.

137. (New) The solid carbon product of claim 133 in which the carbon source subject to vaporization in step (a) is graphite rods.

138. (New) The solid carbon product of claim 133 wherein the carbon source is vaporized in step (a) through heating the carbon source by means of an electrical current of sufficient intensity to produce the sooty carbon product.

139. (New) The solid carbon product of claim 138 wherein the electrical current is about 100 amps.

140. (New) The solid carbon product of claim 133 wherein the inert quenching gas of

step (a) is a noble gas.

141. (New) The solid carbon product of claim 133 wherein the carbon source is vaporized in step (a) at a pressure ranging from 50 torr to 400 torr.

142. (New) The solid carbon product of claim 141 wherein the carbon is vaporized in step (a) at approximately 100 torr.

143. (New) The solid carbon product of claim 133 wherein the carbon is vaporized in step (a) at a pressure ranging from about 2 to 3 atmospheres.

144. (New) The solid carbon product of claim 133 wherein the collecting substrate in step (b) is a glass surface.

145. (New) The solid carbon product of claim 140 wherein the inert gas is helium or argon.

146. (New) The solid carbon product of claim 133 wherein the non-polar organic solvent of step (d) is carbon disulfide, benzene, carbon tetrachloride or toluene.

147. (New) The solid carbon product of claim 146 wherein the solvent is benzene.

148. (New) The solid carbon product of claim 146 wherein the solvent is carbon tetrachloride.

149. (New) The solid carbon product of claim 133 wherein recovery step (e) comprises evaporating the solvent.

150. (New) A solid carbon product prepared by the process comprising: (a) evaporating a carbon source in the presence of an inert quenching gas under conditions effective to produce a sooty carbon product containing cage molecules, said cage molecules being present in said sooty carbon product in sufficient concentration to allow a macroscopic amount of said cage molecules to be separated from said sooty product;

(b) collecting the sooty carbon product produced therefrom; (c) subliming the carbon product comprising cage molecules from the sooty carbon product; and (d) condensing the sublimed carbon product comprising cage molecules.

151. (New) The solid carbon product of claim 150, wherein the collecting substrate in step (b) is a glass surface.

152. (New) The solid carbon product of claim 150 wherein the sublimation occurs at a temperature ranging from 100°-500° C.

153. (New) The solid carbon product of claim 152 wherein step (c) comprises heating the carbon product comprising cage molecules in a vacuum or inert atmosphere at effective sublimation temperatures to extract the carbon product comprising cage molecules from said sooty carbon product.

154. (New) The solid carbon product of claim 150 in which the carbon source in step (a) is vaporized in an evacuated reactor.

155. (New) The solid carbon product of claim 154 in which the carbon in step (a) is vaporized in an evacuated bell jar.

156. (New) The solid carbon product of claim 150 in which the carbon subject to vaporization in step (a) is graphite.

157. (New) The solid carbon product of claim 150 in which the carbon subject to vaporization in step (a) is graphite rods.

158. (New) The solid carbon product of claim 150, wherein the carbon source in step (a) is vaporized by passing an electric current of sufficient intensity to produce a sooty carbon product.

159. (New) The solid carbon product of claim 158, wherein the electrical current is

about 100 amps.

160. (New) The solid carbon product of claim 150, wherein the inert quenching gas of step (a) is a noble gas.

161. (New) The solid carbon product of claim 150, wherein the carbon source in step (a) is vaporized at a pressure ranging from 50 torr to 400 torr.

162. (New) The solid carbon product of claim 161, wherein the carbon source is vaporized in step (a) at approximately 100 torr.

163. (New) The solid carbon product of claim 160, wherein the noble gas is helium or argon.